Contents

IP addressing commands

The IP addresses in this chapter refer to IPv4 addresses unless otherwise specified.

The term "interface" in this chapter refers to VLAN interfaces.

display ip interface

Use **display ip interface** to display IP configuration and statistics for the specified Layer 3 interface or all Layer 3 interfaces.

Syntax

display ip interface [*interface-type interface-number*]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

interface-type interface-number: Specifies an interface by its type and number.

Usage guidelines

Use the **display ip interface** command to display IP configuration and statistics for the specified Layer 3 interface. The statistics include the following information:

- The number of unicast packets, bytes, and multicast packets the interface has sent and received.
- The number of TTL-invalid packets and ICMP packets the interface has received.

The packet statistics helps you locate a possible attack on the network.

If you do not specify an interface, the command displays information about all Layer 3 interfaces.

Examples

Display IP configuration and statistics for VLAN-interface 10.

```
<Sysname> display ip interface vlan-interface 10
Vlan-interface10 current state : DOWN
Line protocol current state : DOWN
Internet Address is 1.1.1.1/8 Primary
Broadcast address : 1.255.255.255
The Maximum Transmit Unit : 1500 bytes
input packets : 0, bytes : 0, multicasts : 0
output packets : 0, bytes : 0, multicasts : 0
TTL invalid packet number:         0
ICMP packet input number:          0
  Echo reply:                      0
  Unreachable:                     0
  Source quench:                   0
  Routing redirect:                0
  Echo request:                    0
```

```
Router advert:                  0
Router solicit:                 0
Time exceed:                    0
IP header bad:                  0
Timestamp request:              0
Timestamp reply:                0
Information request:            0
Information reply:              0
Netmask request:                0
Netmask reply:                  0
Unknown type:                   0
```

Table 1 Command output

Field	Description
current state	Current physical state of the interface: • **Administrative DOWN**—The interface is shut down with the **shutdown** command. • **DOWN**—The interface is administratively up but its physical state is down, which might be caused by a connection or link failure. • **UP**—Both the administrative and physical states of the interface are up.
Line protocol current state	Current state of the link layer protocol: • **DOWN**—The protocol state of the interface is down. • **UP**—The protocol state of the interface is up. • **UP (spoofing)**—The protocol state of the interface pretends to be up. However, no corresponding link is present, or the corresponding link is not present permanently but is established as needed.
Internet Address	IP address of an interface followed by: • **Primary**—A primary IP address. • **Sub**—A secondary IP address. • **DHCP-Allocated**—An IP address obtained through DHCP. • **BOOTP-Allocated**—An IP address obtained through BOOTP. • **Cluster**—A cluster IP address. • **Mad**—A MAD IP address. • **IRF-Member**—IP address of the management Ethernet port of an IRF member device.
Broadcast address	Broadcast address of the subnet attached to an interface.
The Maximum Transmit Unit	Maximum transmission units on the interface, in bytes.
input packets, bytes, multicasts output packets, bytes, multicasts	Unicast packets, bytes, and multicast packets received on an interface (statistics start at the device startup).
TTL invalid packet number	Number of TTL-invalid packets received on the interface (statistics start at the device startup).

Field	Description
ICMP packet input number: Echo reply: Unreachable: Source quench: Routing redirect: Echo request: Router advert: Router solicit: Time exceed: IP header bad: Timestamp request: Timestamp reply: Information request: Information reply: Netmask request: Netmask reply: Unknown type:	Total number of ICMP packets received on the interface (statistics start at the device startup): • Echo reply packets. • Unreachable packets. • Source quench packets. • Routing redirect packets. • Echo request packets. • Router advertisement packets. • Router solicitation packets. • Time exceeded packets. • IP header bad packets. • Timestamp request packets. • Timestamp reply packets. • Information request packets. • Information reply packets. • Netmask request packets. • Netmask reply packets. • Unknown type packets.

Related commands

- **display ip interface brief**
- **ip address**

display ip interface brief

Use **display ip interface brief** to display brief IP configuration information for the specified Layer 3 interface or all Layer 3 interfaces.

Syntax

display ip interface [*interface-type* [*interface-number*]] **brief**

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

interface-type: Specifies the interface type.

interface-number: Specifies the interface number.

Usage guidelines

Use the **display ip interface brief** command to display brief IP configuration information, including the state, IP address, and description of the physical and link layer protocols, for the specified Layer 3 interface or all Layer 3 interfaces.

If you do not specify the interface type and interface number, the command displays the brief IP configuration information for all Layer 3 interfaces.

If you specify only the interface type, the command displays the brief IP configuration information for all Layer 3 interfaces of the specified type.

If you specify both the interface type and interface number, the command displays the brief IP configuration information for the specified interface.

Examples

Display brief IP configuration information for VLAN interfaces.

```
<Sysname> display ip interface vlan-interface brief
*down: administratively down
(s): spoofing (l): loopback
Interface                    Physical Protocol IP Address      Description
Vlan10                       down     down     6.6.6.1         Vlan-inte...
Vlan2                        down     down     7.7.7.1         Vlan-inte...
```

Table 2 Command output

Field	Description
*down: administratively down	The interface is administratively shut down with the **shutdown** command.
(s) : spoofing	Spoofing attribute of the interface. It indicates that an interface might have no link present even when its link layer protocol is up or the link is established only on demand.
Interface	Interface name.
Physical	Physical state of the interface: • ***down**—The interface is administratively shut down with the **shutdown** command. • **down**—The interface is administratively up but its physical state is down (possibly because of poor connection or line failure). • **up**—Both the administrative and physical states of the interface are up.
Protocol	Link layer protocol state of the interface: • **down**—The protocol state of the interface is down (typically when no IP address is configured for the interface). • **up**—The protocol state of the interface is up. • **up(s)**—The protocol state of the interface is up (spoofing).
IP Address	IP address of the interface. If no IP address is configured, **unassigned** is displayed.
Description	Interface description information. A maximum of 12 characters can be displayed. If there are more than 12 characters, only the first 9 characters are displayed.

Related commands

- **display ip interface**
- **ip address**

ip address

Use **ip address** to assign an IP address to the interface.

Use **undo ip address** to remove the IP address from the interface.

Syntax

ip address *ip-address* { *mask-length* | *mask* } [**irf-member** *member-id* | **sub**]

undo ip address [*ip-address* { *mask-length* | *mask* } [**irf-member** *member-id* | **sub**]]

Default

No IP address is assigned to an interface.

Views

Interface view

Predefined user roles

network-admin

Parameters

ip-address: Specifies the IP address of the interface, in dotted decimal notation.

mask-length: Specifies the subnet mask length in the range of 1 to 31. For a loopback interface, the value range is 1 to 32.

mask: Specifies the subnet mask in dotted decimal notation.

irf-member *member-id*: Assigns an IP address to the management Ethernet port of the specified IRF member device. The *member-id* argument specifies an IRF member device by its member ID in the range of 1 to 10.

sub: Assigns a secondary IP address to the interface.

Usage guidelines

Use the command to configure a primary IP address for an interface. If the interface connects to multiple subnets, configure primary and secondary IP addresses on the interface so the subnets can communicate with each other through the interface.

An interface can have only one primary IP address. A newly configured primary IP address overwrites the previous address.

You cannot assign secondary IP addresses to an interface that obtains an IP address through BOOTP, DHCP, or IP unnumbered.

The **undo ip address** command removes all IP addresses from the interface. The **undo ip address** *ip-address* { *mask* | *mask-length* } command removes the primary IP address. The **undo ip address** *ip-address* { *mask* | *mask-length* } **sub** command removes a secondary IP address. Before removing the primary IP address, remove all secondary IP addresses.

The primary and secondary IP addresses you assign to the interface can be located on the same network segment, but different interfaces on your device must reside on different network segments.

The IP addresses assigned to the management Ethernet ports of all IRF member devices must be in the same subnet. In an IRF fabric, only the IP address assigned to the management Ethernet port of the master takes effect. Make sure no IP address conflict exists when you assign IP addresses to the management Ethernet ports of subordinates. The system does not warn of an IP address conflict because the IP addresses assigned to the management Ethernet ports of subordinates do not take effect. After an IRF fabric split, the IP addresses assigned to the management Ethernet ports of the new masters (original subordinates) take effect.

Examples

Assign VLAN-interface 10 a primary IP address 129.12.0.1 and a secondary IP address 202.38.160.1, with subnet masks both 255.255.255.0.

```
<Sysname> system-view
[Sysname] interface vlan-interface 10
[Sysname-Vlan-interface10] ip address 129.12.0.1 255.255.255.0
[Sysname-Vlan-interface10] ip address 202.38.160.1 255.255.255.0 sub
```

Related commands

- **display ip interface**
- **display ip interface brief**